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A Report to the Maryland General Assembly  
Senate Budget and Taxation Committee  
and  
House Appropriations Committee

FEASIBILITY OF REQUIRING  
PERIODIC INSPECTION OF TRUCKS

October 20, 1987



Prepared by  
Maryland Department of Transportation  
in cooperation with  
Governor's Task Force on Uniform Motor Carrier Procedures  
Truck Safety Task Force  
Department of Public Safety and Correctional Services  
Public Service Commission  
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## Executive Summary

The approved FY 88 State budget includes a requirement that the Maryland Department of Transportation, in conjunction with other affected agencies, conduct a study of the feasibility of annual inspection for trucks over 3/4 ton. The budget report further specifies that this study be done in coordination with any executive task force created to examine truck safety issues. The Truck Safety Task Force was appointed to study truck safety issues according to Senate Joint Resolution 2 (SJR 2). The Governor's Task Force on Uniform Motor Carrier Procedures and its Industry Advisory Committee, created earlier, had been addressing numerous state motor carrier procedures issues previously. This report is intended to satisfy the requirements of the budget committees and of SJR 2.

The Maryland Motor Carrier Safety Program was started in 1985 utilizing primarily Federal funds. Early in 1987, Governor Schaefer announced that the program would be considerably expanded at state expense increasing the number of inspectors from 20 to 40 by October 1988. During FY 88, the Maryland Transportation Authority will also create a truck enforcement unit. It is estimated that when both efforts are fully staffed, 35,000 commercial vehicles and their drivers traveling Maryland highways will be inspected annually. Safety reviews to assist carriers implement safety programs and in-depth accident investigations to determine accident causes will continue. The Maryland Public Service Commission (PSC) will continue its in-terminal audits of motor carrier safety records and inspections of vehicles under its jurisdiction. The objective of the program is to get carriers and drivers to follow State and Federal regulations to bring both vehicles and drivers to a safe operating condition to meet the overall accident reduction goal.

To assess the effectiveness of inspection programs, both periodic (PMVI) and random for all motor vehicles, an extensive literature search was conducted. The results of most of the studies located were inconclusive or conflicting. Reports on California, Utah, and Idaho roadside inspection of trucks indicate that truck accident rates are reduced as a result of roadside inspections. Mail survey results from 24 states indicate that the percentage rate of trucks placed out of service during roadside inspections in PMVI states was marginally lower than in non-PMVI states. Analysis of Maryland roadside inspection data indicated that there was no significant difference between trucks from PMVI states and non-PMVI states. Analysis of 1986 Maryland roadside inspection data indicates that vehicles regulated by PSC and subject to in-terminal inspections and audits have a 27% out-of-service rate compared to 60% overall for Maryland registered trucks and buses. In 1986, British Columbia implemented a combination program of semi-annual inspections and exemption from that inspection for carriers with five or more

Adoption of this recommendation provides the broadest benefits in terms of assuring that Maryland based vehicles are inspected and maintained on a periodic basis, and drivers, both Maryland and out-of-state, abide by licensing and other safety regulations. Out-of-state trucks and buses using Maryland highways would also be inspected at the higher rate. The estimated total cost for this option is \$5,654,000 or an increase of \$2,660,000 over the current program.

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- A - Senate Joint Resolution No. 2
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- C - Truck Safety Task Force Membership List
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- E - Truck Inspection Subcommittee Membership List
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- J - Survey of Some PMVI and non-PMVI States
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## **Feasibility of Requiring Periodic Inspection of Trucks**

### **Report Requirements**

The Senate Budget and Taxation and the House Appropriations Committees' report on the approved FY 88 state budget includes the following requirement regarding the study of feasibility of periodic inspection for trucks:

**The committees are concerned that the proposed approach (current program) addresses only part of the problem. Since a significant proportion of truck-related accidents involve Maryland registered vehicles, a program of regular inspection may be appropriate. If legislation establishing such a program is not enacted in 1987, the Department of Transportation, in conjunction with the other affected agencies, is directed to prepare a study of the feasibility of an annual inspection program for trucks over 3/4 ton. This study shall be conducted in coordination with any executive task force created to examine the truck safety issue and shall be submitted not later than October 1, 1987.**

Among other things, Senate Joint Resolution No. 2 (SJR 2), Highway Safety - Trucking Industry, adopted by the 1987 Session of the General Assembly contains the following requirement:

**(4) A study of feasibility of requiring an annual inspection for certain classifications of trucks;**

A copy of SJR 2 is enclosed (Attachment A).

This report is intended to satisfy both requirements.

## Introduction

Since January 1987, motor carrier safety has been one of the priority issues addressed by the Governor's Task Force on Uniform Motor Carrier Procedures. This group was originally established in June 1986 by Executive Order and was mainly oriented to state procedural uniformity issues dealing with motor carriers. This Task Force and its Motor Carrier Industry Advisory Committee were very helpful in developing plans for enhancement of the Maryland Motor Carrier Safety Program (MMCSP). The safety issues received added emphasis with the appointment of the Truck Safety Task Force members by Governor William Donald Schaefer according to SJR 2. Since there is considerable overlap in the membership of these groups and since both are chaired by the Secretary of the Maryland Department of Transportation (MDOT) Richard H. Trainor, the groups have met jointly. Subcommittees largely drawn from members of all of the groups have been named to address specific issues. The subcommittee designated to address the periodic truck inspection issue, the Truck Inspection Subcommittee is an example of such an effort. Membership lists of Task Forces, Advisory Committee, and Inspection Subcommittee are attached (Attachments B, C, D, and E).

The Subcommittee prepared its work plan in early June 1987 and held numerous meetings during the summer and fall. The Subcommittee developed and sent survey forms on motor carrier safety programs to 35 states, reviewed existing studies on the effectiveness of motor vehicle inspection programs, reviewed the potential impact of the Federal Motor Carrier Safety Act of 1984 and proposed Federal rulemaking as a result of that legislation, and other information bearing on the issue. The Inspection Subcommittee reported its progress to joint meetings of the Task Forces and the Advisory Committee and reviewed this final report with all these groups on September 11 and October 14, 1987 and obtained their concurrence with recommendations contained in this report.

Mechanical defects are cited as causing 5.6% of the truck-at-fault accidents in studies of police reports. Some researchers suggest that this number may be low. California Highway Patrol estimates for truck-at-fault accidents for the past ten years are that in 94% of the cases it is the drivers fault, 4% equipment defects, and 2% unknown (Attachment F). In addition to addressing the vehicle problems and the recommended solutions, the Task Forces will also review what accident prevention countermeasures Maryland should take in driver training, improvement, and control. The Federal Motor Carrier Safety Act of 1986 which establishes the Commercial Driver License Program will have a substantial impact in this area. The goals of the program are to improve the quality of commercial vehicle drivers through training and testing, and to get problem drivers off the



highways through stiff driver penalties for traffic violations and possession of multiple driver's licenses.

### **Maryland Motor Carrier Safety Program**

Existing Federal and State laws and regulations require motor carriers and drivers to meet certain safety performance criteria and standards. These regulations require that the components of the vehicle are in safe operating condition at all times and that the drivers are qualified and operate the vehicle in a safe manner. **If all carriers and drivers followed the procedures outlined in these regulations, safety problems related to condition of the vehicles or drivers would be minimized.** Many carriers and drivers follow these requirements and some exceed them. Unfortunately, sufficient numbers do not follow these requirements and therefore bring about the need for an enforcement program to remove the offenders, both vehicles and drivers, from the highway system (until they are in compliance) and to bring other vehicles and drivers up to standards. A key to success is to provide a mix of incentives and disincentives to get the industry to provide safe vehicles and drivers. The objective of any motor carrier safety program should be to bring both vehicles and drivers to an overall safe operating condition to meet the overall accident reduction goal.

Goal. The overall goal of the Maryland Motor Carrier Safety Program is a major reduction in traffic accidents involving commercial motor vehicles; the deaths, injuries, and property losses resulting from them; and, in the risk associated with the highway transportation of hazardous materials.

Background. A 1983 MDOT study showed the need for and potential safety benefits from a state motor carrier safety program. Following a development phase, the Maryland Motor Carrier Safety Program became operational in May 1985. The effort started with a single two-man team conducting inspections several days per week. At that time, program activities were limited principally to roadside safety inspection of heavy trucks, their drivers, and cargos, and, to general education of the motor carriers regarding the program and the state's motor carrier safety regulations. There are several state agencies involved in this program. MDOT is the lead agency for developing, updating, and administering the program. The Maryland State Police (MSP), the Public Service Commission (PSC), and the Maryland Department of the Environment (MDE) carry out operational activities. Since 1985, the program has been expanded in both scope and magnitude. Roadside inspections were broadened to include buses and their drivers. The inspection staff initiated in-depth investigations of serious traffic accidents involving heavy trucks and buses and safety reviews of individual motor carriers. A safety review is an educational visit to a carrier to review its overall safety system and to recommend improve-



ments. PSC is continuing its program of auditing intrastate carriers' preventive maintenance (PM) procedures and in-terminal vehicle inspections. An audit or compliance review is an enforcement type activity consisting of assuring that a motor carrier inspects and maintains its vehicles on a periodic basis and retains records of such inspections and maintenance activities. Maryland State Police is continuing its inspection program for vehicles for resale or brought to Maryland from another state. Safety equipment repair orders (SERO) also continue to be issued by MSP and other law enforcement agencies of Maryland.

Approved Program Enhancement. Early in 1987, Governor Schaefer announced that additional manpower and other program enhancements will be implemented using appropriations from the State Transportation Trust Fund. Until FY 88, Maryland's motor carrier safety program received 80 percent of its funds from the Federal Motor Carrier Safety Assistance Program (MCSAP) implementation grants. That funding provided for an expansion in manpower during Federal FY 87 to a total of 20 full-time inspectors. As a result, the total number of full-time MSP, PSC and MDE inspectors will be increased to 40 positions by October 1988. The program enhancements were discussed extensively with various committees of the General Assembly. In addition, the Maryland Transportation Authority will establish a Truck Inspection Division of 20 inspectors in FY 88 to conduct safety inspections and weighing operations at toll facilities. As part of MDOT's capital program, the State Highway Administration has begun a major effort to develop additional inspection and weighing sites along major truck routes to improve statewide coverage. The bottom line of the expansion, as approved by the 1987 Session of the General Assembly, is to improve safety through an increase in the number of inspections to at least five times the inspection rate in 1986 (from approximately 5,000 to 28,000) and to adequately cover the commercial vehicle routes of the state.

Program Evaluation. The 1987 Report of the Joint Chairmen of the budget committees required the Department of Transportation, in conjunction with other participating agencies to develop a framework for evaluating the impact of the Maryland Motor Carrier Safety Program. Additionally, the Department was asked to explain how the results of that analysis would be integrated into the administration of the program. A report responding to these questions was submitted June 1, 1987. Various techniques to evaluate the impact of this program will include: assessment of the extent to which program objectives are achieved; comparative analyses of inspection and review findings; and, statistical analyses of traffic congestion, accidents, injuries, and deaths involving heavy trucks. In order to accomplish these items, data collection will be improved, in-depth accident investigations will be conducted and professional technical experts will be retained to assist in evaluation. The results of these evalua-

tions will be integrated into program administration through regular program reviews by the Maryland Motor Carrier Safety Program Coordinating Committee composed of agency of representatives involved in the program. Several other groups, including the Task Forces and the Advisory Committee, will also be analyzing the program and recommending adjustments. Maryland is a member of the Commercial Vehicle Safety Alliance composed of majority of the states and provinces which allows it to coordinate the program with other jurisdictions and in the process, adopt new technology and program ideas.

### **Effectiveness and Impact of Inspection Programs**

Studies of Inspection Programs. An extensive literature search was conducted to gather information about effectiveness of motor vehicle inspection programs both periodic (PMVI) and random. The results of most of these studies were found to be inconclusive or conflicting. For example, a widely distributed 1980 study by the American Enterprise Institute for Public Research concluded that PMVI, both annual and semiannual, does not measurably reduce highway accidents. The second major finding in the study was that random inspection programs "tend to reduce highway death rates or at least are accompanied by rates lower than those in non-random inspection states." The National Highway Traffic Safety Administration (NHTSA) of the U. S. Department of Transportation (U.S. DOT) disputed, but has not disproved those findings. NHTSA maintains that based on the high societal costs of motor vehicle accidents and the cost to inspect motor vehicles, PMVI could be cost-effective but has not produced any studies to prove that theory. The state of California, in a study also disputed by NHTSA, concluded that random inspections were more cost-effective than PMVI. Nevertheless, California has terminated its random inspection program for automobiles and other light vehicles, but has continued the program for heavy trucks and buses. California's roadside truck inspection data (Attachment F) show some impressive truck accident reductions from 1976 to 1986. The data indicate that for fatal and injury truck-at-fault accidents the rate per million truck miles traveled decreased from 94.09 to 62.91 from 1977 to 1986 as the number of roadside inspections increased. Over the ten-year period brakes as the primary collision factor has decreased 10% indicating better maintenance procedures, according to the California report. Prior to implementing MCSAP, FHWA conducted roadside inspection demonstration projects in four states. Data for Utah and Idaho (Attachments G and H) from the interim report covering approximately a two-year period, confirms the California experience that roadside inspections do contribute to truck accident reductions. Also enclosed (Attachment I) is a copy of the executive summary of NHTSA's 1985 report entitled Cost Effectiveness of Periodic Motor Vehicle Inspection (PMVI): A Review of the Literature which provides a summary of numerous

reports on the topic. These studies address all vehicles. No separate studies of truck PMVI could be located.

Survey of States. In order to gather information on inspection programs, a survey was sent to 23 jurisdictions that have PMVI, 10 that dropped PMVI within the past 10 years, and two additional ones with no PMVI to complete the Northeast. A total of 24 states responded. The results of the survey are shown in Attachment J. It should be noted that the roadside inspection results for both groups include vehicles based in the inspecting state as well as vehicles from PMVI and non-PMVI states. None of the states contacted had data to segregate PMVI from non-PMVI vehicles. An analysis of the data indicates that trucks inspected at roadside in non-PMVI states were slightly more likely to be placed out-of-service for vehicle defects than trucks so inspected in (both semi-annual and annual) PMVI states, 42.7 percent to 39.1 percent. Caution in use of these data is necessary because of certain reporting inconsistencies and relatively small difference. For these reasons, comparisons between the non-PMVI and the PMVI states can not be regarded as conclusive.

British Columbia Program. On September 1, 1986, the Province of British Columbia implemented a combination program of semi-annual inspections by approved private garages for smaller carriers and exemptions from that requirement for carriers with five or more vehicles who have an officially approved preventive maintenance program. The PM programs are monitored by safety audits of maintenance records and quality control inspections of actual vehicles. If a carrier's PM program quality falls below standards, the exemption is lifted and the carrier is required to engage the services of a licensed inspection station to have vehicles inspected semi-annually. Results for the first 12 months (Attachment K) indicate that, on the average, 54% of the semi-annually inspected vehicles were placed out of service at roadside and terminal inspections compared to 35% for the vehicles in the PM program.

Maryland Data. During CY 1986, a total of 4,940 roadside inspections were conducted in Maryland resulting in 54% overall out-of-service rate. The percentage for Maryland registered vehicles placed out of service was 60%. One reason for this difference could be that carriers probably use better equipment for long hauls and poorer, older equipment in local service. Also, the Maryland vehicles would include many used in local businesses not normally considered motor carriers. Roadside inspections are not necessarily random and thus not indicative of the truck population as a whole. During the first quarter of CY 1987, a total of 1,563 inspections also resulted in an out-of-service rate of 54%. In order to obtain some indication whether vehicles from PMVI states were in better condition, the first quarter data was separated into several categories and out-of-

service rates calculated. With Maryland data excluded, the out-of-service rate for non-PMVI state vehicles was 2% higher than for PMVI state vehicles. Analysis of the data indicates that the small difference is not statistically significant and therefore conclusions cannot be drawn that PMVI state vehicles have fewer defects than non-PMVI state vehicles.

PSC In-Terminal Inspections. Maryland PSC regularly conducts in-terminal inspections for intrastate carriers under its jurisdiction. The 1986 results are shown in Attachment L. Maintenance procedures and records are also audited. The percentage of vehicles placed out of service ranges from 3% to 14% for the six categories of vehicles inspected. An analysis of 1986 Maryland roadside inspection data indicates that the vehicles covered by PSC terminal inspections are in better condition (27% out-of-service for PSC regulated vs. 60% for Maryland registered overall) when inspected at roadside inspections (Attachment M).

Frequency of Inspections. The frequency of truck inspections is a controversial issue because of the comparatively high mileage accumulated by trucks resulting in high rate of wear, deterioration, and out-of-adjustment condition of vehicle components. It is estimated that the average annual mileage nationally for a tractor/trailer is 72,000 miles compared to 12,000 for a passenger car. In FY 87, the average mileage accumulated per truck registered for Maryland fuel use tax was 74,098. All truck tractors and trucks with more than two axles operating in or through Maryland are required to register for this tax. In FY 87, a total of 430,801 vehicles were registered for quarterly fuel use reporting in Maryland. Of this total, 29,948 were Maryland based vehicles. Many motor carriers maintain that, from both an economic and safety viewpoint, their vehicles undergo periodic inspections much more frequently than annual as part of a preventive maintenance program based on mileage. They further argue that time-based inspections, such as annual, interfere with PM schedules. Periodic maintenance programs, required by Federal and state regulations, are in addition to inspection requirements by the driver.

#### **Motor Carrier Safety Act of 1984 and Federal Regulations**

Current Regulations. Interstate motor carriers and drivers operating vehicles on an interstate basis are covered by safety regulations promulgated by the Federal Highway Administration (FHWA) of U.S. DOT. These regulations cover qualification of drivers, driving of vehicles, parts and accessories necessary for safe operation, reporting and recording of accidents, and hours of service for drivers. The part on inspection, repair, and maintenance requires that every motor carrier shall systematically inspect, repair and maintain, or cause to be systematically inspected, repaired and maintained, all motor vehicles subject to

its control. Records for each vehicle must be kept. The same part of the regulation requires that the driver conduct his own inspection to assure that the vehicle meets all safety requirements and that any defects noted by the previous driver have been corrected by the motor carrier. Other parts of the regulations cover transportation of hazardous materials and employee safety and health standards. With the exception of driver qualifications and hours of service which differ for Maryland intrastate operations, all others apply equally to interstate and Maryland intrastate operations.

Motor Carrier Safety Act of 1984. Section 210 of the Motor Carrier Safety Act of 1984 (P.L. 98-554) requires that the Secretary (of U.S. DOT) establish regulations for annual or more frequent inspections of commercial motor vehicles unless the Secretary finds that another inspection system is as effective as an annual or more frequent inspection system. A state may have its own inspection program if the Secretary determines that such a program is as effective as the Federal program.

Proposed Rulemaking. After the effective date of the Motor Carrier Safety Act of 1984, FHWA issued a notice of proposed rulemaking (OMCS/BMCS Docket No. MC-113) initially asking for general comments and suggestions, and then, by Notice 87-02 on February 26, 1987, issued proposed additions to Title 49 Code of Federal Regulations, Part 396 - Inspection, Repair, and Maintenance. The proposed additions would mandate annual inspection of interstate commercial motor vehicles of more than 10,000 pounds gross vehicle weight (GVW) in accordance with the following general requirements:

- o Self-inspection by carrier if carrier has 5 or more commercial vehicles.
- o Inspection by a commercial repair facility if carrier has less than 5 commercial vehicles.
- o No governmental approval/certification of self-inspection or commercial inspection facility or inspectors is required. Inspectors must be qualified by training/experience.
- o Vehicle to be marked with inspection date, and inspection report to be retained.
- o State and Federal motor carrier safety inspectors to check for inspection date markings during roadside inspections and inspection reports during safety reviews and audits at carriers' terminals.
- o A state periodic inspection program may be an acceptable alternative if approved by FHWA.



- o Annual inspection standards are more stringent than those for roadside inspections.

The proposed program does not negate the need for roadside inspections; rather, it uses such programs as an enforcement mechanism. Upon its final promulgation, the Federal rule, whether as proposed or in some changed form, would also become part of the Maryland motor carrier safety regulations and would apply to heavy trucks and buses being operated in interstate or intrastate commerce. However, it would not apply to vehicles specifically exempt from the state regulations (school and transit buses; farm tractors and equipment; travel, camping and non-freight trailers; emergency vehicles; van-pool vehicles; and, special mobile equipment) or, to vehicles operated wholly within a commercial zone unless the commercial zone exemption is eliminated.

Responses to Proposed Rulemaking. Responses to the Federal docket were reviewed and a representative cross-section of them summarized (Attachment N). Some respondents point out that annual inspections are not sufficient for high mileage commercial vehicles while others agree with the annual frequency. Some respondents feel that the five-vehicle minimum fleet size for self-inspection is satisfactory, others suggest a one-vehicle threshold, and some suggest increasing the minimum number to fifteen. Recognition of a carrier's PM program as a substitute for annual inspection was suggested in several cases. Greater government oversight, approval, and enforcement of the program were also recommended.

Impact on State Programs. P.L. 98-554 also requires that state motor carrier safety laws, rules, regulations, orders, and standards be nationally uniform to the extent practicable. Under this law, U.S. DOT is required and has undertaken a process to review all state motor carrier laws and regulations classifying them as follows:

- o Type A. State requirements that cover the same subject matter as the Federal regulation but are "additional or more stringent."
- o Type B. State requirements that cover the same subject matter as the Federal regulation but are not "additional or more stringent."
- o Type C. State requirements where there is not a Federal standard regarding the same subject matter.

A state desiring to continue any Type A law or regulation had to petition the Secretary (of U.S. DOT) within 120 days after the effective date of P.L. 98-554. In determining whether a state may continue in effect a more stringent law or regulation, the

Secretary must consider whether there is a compelling local safety need therefor, that the State requirement is not incompatible with Federal safety requirements, and that it will not unduly burden interstate commerce. P.L. 98-554 also provides that any state seeking to put into effect an additional or more stringent commercial motor vehicle safety requirement shall petition the Secretary for review. Upon receipt of any such petition, the Secretary must initiate rulemaking process and issue a final rule within 180 days after receipt of such a petition. Type C requirements are not affected unless and until there is a Federal regulation promulgated in the same subject matter. Should the current proposed Federal annual inspection regulations become effective in its proposed form, Maryland could not require certification of inspection stations for annual inspection purposes but could continue the practice for title transfer purposes and registration of vehicles brought to Maryland from other states. If Maryland desires to certify inspection stations in such a circumstance, it would have to petition the Secretary accordingly.

Future of Federal Rulemaking. At this juncture, it is difficult to predict what the final Federal regulation will contain or what its impact will be on state programs. Officials at FHWA have indicated that the final regulations will probably be issued early in 1988.

### **Options for Maryland**

Existing studies regarding effectiveness of many inspection programs are inconclusive and conflicting. In addition, it is uncertain how and when P.L. 98-554 inspection provisions will be implemented. In light of this situation, it is a complex task to select the best course of action. In order to pick viable option(s), the following were developed:

Option 1. Wait for final rulemaking by FHWA to implement Section 210 of P.L. 98-554. Concurrently, proceed with the approved enhancement of the Maryland Motor Carrier Safety Program of roadside inspections, in-depth accident investigations, and safety reviews now underway and due to reach currently authorized levels by October 1988.

Option 2. Establish an annual inspection program using state-certified inspection stations including self-inspection by those who qualify for state certification in addition to roadside inspections at the current level.

Option 3. Increase roadside inspections over current plans with increased staffing, while maintaining in-depth accident investigations and safety reviews at presently planned levels.



Option 4. Increase roadside inspections coupled with follow-up at terminals to include vehicle inspections, safety audits, and safety reviews, and, in-depth accident investigations by increasing staff for all functions.

Option 5. Institute PM program certification and enforcement tied into registration renewal; eliminate current roadside inspections, safety reviews, and in-depth accident investigations.

Option 6. Provide more staff to increase the number of roadside inspections, safety reviews, and in-depth accident investigations; and, institute PM program certification and enforcement tied into registration renewal, and, terminal inspections and audits to assure all vehicles are inspected and maintained at least on an annual basis or every 25,000 miles, whichever occurs first.

### Discussion of Options

The following is a discussion and analysis of the advantages and disadvantages of each option. The advantages/disadvantages for each option are also outlined in Attachment O.

Option 1. Wait for final rulemaking by FHWA to implement Section 210 of P.L. 98-554. Concurrently, proceed with the approved enhancement of the Maryland Motor Carrier Safety Program of roadside inspections, in-depth accident investigations, and safety reviews now underway and due to reach currently authorized levels by October 1988.

This option amounts to proceeding with the current Maryland plan of enhancement and improving the program through adjustments based on the program evaluation discussed earlier in this report. It is estimated that 7% of the trucks and buses traveling Maryland highways will be inspected annually. Other enhancements may result from the Federal rulemaking process which would apply to both interstate and intrastate carriers. Roadside inspections assure that both Maryland and out-of-state vehicles and drivers are targeted for inspection. In-depth accident investigations and safety reviews are also included. Inspection of vehicles for resale and issuance of SERO's for defective equipment would also continue as would terminal inspections and audits by PSC for certain intrastate carriers. Accident reduction should result if the California, Idaho and Utah roadside inspection experience cited earlier holds true. If the final Federal annual inspection regulations are issued as proposed, no direct legislative or administrative action is necessary on Maryland's part.

**Option 2. Establish an annual inspection program using state-certified inspection stations including self-inspection by those who qualify for state certification in addition to roadside inspections and other program elements at the current level.**

If this option were adopted, all heavy trucks registered in Maryland would be inspected once over a 12-month period. However, because of the annual high mileage accumulated by most trucks, it is questionable how much additional safety benefit such a program would provide. Research for PMVI effectiveness is contradictory and inconclusive, and, apparently has not been done for trucks only. Survey results of other states and analysis of MMCSP data of PMVI vs. non-PMVI state vehicles indicate that the condition of trucks from PMVI states is not any better than from non-PMVI states. The roadside inspection program would have to be continued, otherwise, out-of-state vehicles and neither Maryland nor out-of-state drivers would be checked. Many Maryland based motor carriers who operate in all 48 contiguous states are concerned about scheduling the equipment to be in Maryland to coincide with a specific date that the annual inspection is due. Some vehicles, although registered in Maryland, may never or very seldom get to Maryland. Such carriers argue that they have a PM program and that their vehicles are being inspected and maintained on a systematic basis according to the accumulated mileage and time. Reciprocal inspection agreements with other states may have to be established to keep these vehicles registered in Maryland if an annual program is established. If this option were adopted and if proposed Federal regulations (Docket MC-113) also take effect, Maryland would probably have to petition the Secretary of U.S. DOT for approval to operate this more stringent program than the proposed Federal one.

**Option 3. Increase roadside inspections over current plans with increased staffing, while maintaining in-depth accident investigations and safety reviews at presently planned levels.**

Under this option with roadside inspections increased to 10% of the trucks and buses using Maryland highways, possible further accident reduction should result over Option 1 if the California, Utah and Idaho experience is duplicated. SERO and resale inspections would also continue. Although carriers would be penalized for time and expense of out-of-service condition as a result of roadside inspections, terminal follow-up audits and inspections, except those conducted by PSC, would not be instituted to assure maintenance is performed and records retained.

**Option 4. Increase roadside inspections coupled with follow-up at terminals to include vehicle inspections, safety audits, and safety reviews, and, in-depth**

**accident investigations by increasing staff for all functions.**

Adoption of this option would further enhance the program by providing increased follow-up, thus forcing more carriers with poor records to conform. Carriers with poor out-of-service records from increased roadside inspections would be identified and receive the terminal follow-up actions. Again, resale inspections and SERO issuance would continue. A shortcoming of this option is that it would not assure that all vehicles receive a standard inspection on some periodic basis.

**Option 5. Initiate PM program certification and enforcement tied to registration renewal; eliminate current roadside inspections, safety reviews, and in-depth accident investigations.**

Terminal inspections and audits are now done by PSC for certain intrastate fleets. Adoption of this option would considerably enhance the provision in the regulations that "every motor carrier shall systematically inspect, repair and maintain, or cause to be systematically inspected, repaired, and maintained all motor vehicles subject to its control." However, dropping of roadside inspections would eliminate inspection of out-of-state vehicles traveling through Maryland and all drivers, both Maryland and out-of-state. Ongoing resale inspections and issuance of SERO's in the course of general traffic law enforcement would continue.

**Option 6. Provide more staff to increase the number of roadside inspections, safety reviews, and in-depth accident investigations; and, institute PM program certification and enforcement tied into registration process, and, terminal inspections and audits to assure all vehicles are inspected and maintained at least once on an annual basis or at least every 25,000 miles, whichever occurs first.**

This is the broadest of the options listed and would likely provide the most benefits. Roadside inspections would cover both Maryland and out-of-state vehicles and drivers, and, identify motor carriers with poor vehicle safety records for terminal follow-up actions. In-depth investigations are being conducted now and would continue. PM program certification and enforcement for commercial vehicles would be a new activity. Terminal inspections and audits would be expanded to cover all carriers based in Maryland. Safety reviews which are part of the current program would also continue. Resale inspections and issuance of SERO's would continue.

### Recommended Course of Action

It is recommended that Maryland proceed with Option 6 above. Adoption of this option should provide the broadest benefits possible. By increasing the number of roadside inspections to 10%, an additional 15,000 vehicles and drivers from both out-of-state and Maryland will be checked. All vehicles over 10,000 pounds GVW would be required to carry a copy of the latest PM program inspection form in the vehicle to be checked during roadside inspections. This enforcement method will identify Maryland based carriers as well as those from other states with poor safety maintenance records for follow-up to obtain corrective action. Follow-up for out-of-state carriers would be through FHWA or directly with the base state. The follow-up for Maryland carriers would consist of safety reviews to assist the carrier and thereafter of safety audits of maintenance and driver qualification records and inspections of vehicles at terminals. Each carrier's PM program would be evaluated against minimum state standards established by regulation, certified if it meets the standards, and enforced to assure that vehicles are inspected and maintained on at least an annual basis or every 25,000 miles, whichever occurs first. Ascertaining the quality of a PM program continuously would be a key factor. In addition to audits, annual fleet mileage for vehicles exceeding 26,000 pounds GVW could be checked by reviewing the International Registration Plan (IRP) files at the Motor Vehicle Administration. (Maryland will be a member of IRP effective January 1, 1988.) For vehicles between 10,000 and 26,000 pounds, follow-up would be primarily through audits and roadside and terminal inspections. Safety ratings are being assigned to interstate carriers by FHWA and could be expanded to cover all Maryland carriers. Sanctions and fines for violators would be established. Tying the PM certification process to registration would assure that all vehicles comply with inspection and maintenance requirements at least on an annual basis. Maryland PSC terminal audits and inspections appear to be effective in that the fleets thus inspected have a much lower out-of-service rate than the average truck on the highway. Similarly, the British Columbia program of PM certification and terminal follow-up appear more effective than just a periodic inspection.

In the proposed Federal rulemaking, utilization of PM programs in lieu of annual inspection were not addressed. Whether or not such provisions will be included is not known. Although current Federal regulations (49CFR396.3) require systematic inspection, repair, and maintenance, they do not specify how often this is to be done. Option 6 above would be an expansion of this requirement for Maryland based vehicles, thus not covered by a Federal standard, and, therefore, Type C according to P.L. 98-554. The proposed Federal annual inspection

requirements (396.17 to 396.25) are in addition to the 396.3 requirements.

It is estimated that it will require two years to fully implement Option 6. It would be advantageous to both the State and the motor carrier industry to allow voluntary participation in the PM program for the first year. Such voluntary participation would provide experience to the state agencies in developing procedures and administering the program and an incentive for carriers to participate so they are ready when the program is enforced. The same effect could be obtained by requiring all carriers to register in the first year but start the enforcement in the second year.

We will continue to monitor Federal developments and concurrently continue to work out many of the details of Option 6. The Truck Inspection Subcommittee of the Truck Safety Task Force and the Governor's Task Force on Uniform Motor Carrier Procedures will continue to provide advice to the administrative agencies on these details. In addition, with the advice of the Task Forces, we will continue to study and seek solutions to the many other areas that impact truck and highway safety as outlined in SJR 2 and additional items we have identified. The proposed program as outlined herein augments the enforcement of the Commercial Driver License Program provisions through roadside inspections of drivers, and, driver records as part of the safety audit at carriers' terminals.

#### Financial Impact of Options

The following is an estimate of incremental costs contained in the options:

A.	Current program (included in Options 1, 2, 3, 4 and 6)	\$2,994,000
B.	Increase roadside inspections from 7% to 10% (included in Options 3, 4 and 6)	(+) 1,500,000
C.	Increase in-terminal safety reviews, audits, and vehicle inspections from 600 to 3,000 per year (included in Options 4 and 6).	(+) 750,000
D.	Increase in-depth accident investigations from 25 to 50 per year (included in Options 4 and 6)	(+) 60,000
E.	PM certification and enforcement (included in Options 5 and 6)	(+) 350,000

F. Annual inspection (included in  
Option 2) (+) 980,000

Based on the above, the total estimated annual cost for each of the options would be as follows:

Option 1 - \$2,994,000  
Option 2 - 3,974,000  
Option 3 - 4,494,000  
Option 4 - 5,304,000  
Option 5 - 350,000  
Option 6 - 5,654,000

Increments A, B, C, D and E above are costs to the State. Costs to the motor carriers for these increments result from vehicle deficiencies or driver violations for being declared out-of-service. In essence, such out-of-service time amounts to additional penalties to the carrier or driver, in addition to penalties imposed by the legal system. Both motor carriers and drivers can avoid such penalties by observing safety laws and regulations.

Increment F contained in Option 2, adding annual inspection at a cost of \$980,000 per year to the state, would place an additional financial impact on the Maryland motor carrier industry, over which the industry has no control since the annual inspection would be required for all vehicles over and above any preventive maintenance plan the carrier may have. The allowed time by current Maryland standards to inspect a two-axle truck with dual tires, a three-axle truck, or a truck tractor is 2.5 hours. The allowance for trailers is 2 hours. Using an average hourly rate of \$45, the inspection cost per tractor/trailer combination is approximately \$203 and \$113 for a straight truck. On this basis, the direct cost to the industry for annual inspection of 95,500 Maryland based commercial vehicles will be approximately \$10,265,000. Additional costs would be incurred for the time lost while the truck is being inspected, time to get the vehicle to and from the inspection station, idle time for the driver, and additional recordkeeping requirements over normal maintenance schedules.

### Conclusion

By pursuing the option with the greatest potential benefits yet remaining flexible for possible changes resulting from P.L. 98-554 and other factors, Maryland could achieve the desired results from its motor carrier safety programs.

ATTACHMENT A



SENATE JOINT RESOLUTION No. 2  
(71r0576)

R5

Introduced by Senator Ruben

Read and Examined by Proofreader:

\_\_\_\_\_  
Proofreader.

\_\_\_\_\_  
Proofreader.

Sealed with the Great Seal and presented to the Governor,

for his approval this \_\_\_\_\_ day of \_\_\_\_\_

at \_\_\_\_\_ o'clock, \_\_\_\_\_ M.

\_\_\_\_\_  
President.

RESOLUTION NO. \_\_\_\_\_

1 A Senate Joint Resolution concerning

2 **Highway Safety - Trucking Industry**

3 FOR the purpose of requesting the Governor to establish a task force to study highway  
4 safety and how it is affected by truck transportation and to make certain reports.

5 WHEREAS, The General Assembly recognizes that deregulation of the trucking  
6 industry has led to an increase in competition in the trucking industry; and

7 WHEREAS, The competition has increased the demands on the trucking industry  
8 and its drivers and equipment; and

9 WHEREAS, There is a recognition and concern by the industry, the public, and  
10 State regulatory and enforcement agencies responsible for transportation and highway  
11 safety that highway safety needs to be improved; now, therefore, be it

12 RESOLVED BY THE GENERAL ASSEMBLY OF MARYLAND, That the  
13 Governor is requested to establish a task force to study problems associated with  
14 improving highway safety in Maryland, especially issues relating to truck transportation  
15 as they pertain to highway safety; and be it further

EXPLANATION:

Underlining indicates amendments to bill.

~~Strike out~~ indicates matter stricken by amendment.

*Italics* denotes opposite chamber/conference committee amendments.

1 RESOLVED, That the task force on highway safety be composed of—

2 (1) ~~2 members of the House of Delegates, appointed by the Speaker of the~~  
3 ~~House, and 2 members of the Senate of Maryland, appointed by the President of the~~  
4 ~~Senate; 3 citizens of this State representing the general public; a representative of the~~  
5 ~~Department of Transportation; a representative from the Motor Vehicle Administration;~~  
6 ~~a representative of the Public Service Commission who is experienced in transportation~~  
7 ~~issues; a representative of the Maryland State Police Truck Enforcement Division; a~~  
8 ~~representative from the Maryland State Police Automotive Safety Enforcement Division;~~  
9 ~~a representative of the State Insurance Division of the Department of Licensing and~~  
10 ~~Regulation; a representative of the Maryland Automobile Insurance Fund; a~~  
11 ~~representative from the Regional Planning Council who is experienced and has the~~  
12 ~~responsibility for hazardous material abatement and containment; a representative of~~  
13 ~~the American Automotive Society Society of Automotive Engineers; a representative of~~  
14 ~~the American Automobile Association; a representative of the independent trucking~~  
15 ~~industry; a representative of organized labor in the trucking industry; a representative of~~  
16 ~~commercial trucking companies; a representative from the insurance industry; a~~  
17 ~~representative from the Maryland Chamber of Commerce; and a representative from the~~  
18 ~~building and construction trades affiliated with the Maryland State and District of~~  
19 ~~Columbia AFL-CIO; a representative of the Chemical Industry; a representative of the~~  
20 ~~Maryland Motor Truckers Association; and a local fire chief who represents the fire~~  
21 ~~chiefs of the Council of Governments and has the responsibility for hazardous material~~  
22 ~~abatement and containment, all of whom to be appointed by the Governor; and be it~~  
23 ~~further 1 member of the House of Delegates, who shall be appointed by the Speaker of the~~  
24 ~~House; 1 member of the Senate, who shall be appointed by the President of the Senate; and~~  
25 ~~2 citizens of Maryland representing the general public; 4 representatives of regulatory and~~  
26 ~~enforcement agencies of the State; 4 representatives of labor and management of the trucking~~  
27 ~~industry; and 1 representative of the insurance industry, each of whom shall be appointed by~~  
28 ~~the Governor; and be it further~~

29 RESOLVED, That the Governor designate the chairman of the task force from the  
30 public sector members of the task force; and be it further

31 RESOLVED, That the task force report its findings and recommendations to the  
32 Governor in 2 reports by January 1, 1988, and January 1, 1989; and be it further

33 RESOLVED, That the task force shall study safety issues related to the operation  
34 of trucks in the State, and that the study shall include:

35 (1) An examination of the causes and effect of accidents involving trucks, and  
36 an evaluation of the strategies for minimizing such accidents;

37 (2) A study of means of improving driver education for truck drivers;

38 (3) An examination of the penalties that may be assessed for violations of the  
39 Maryland Vehicle Law by truck drivers;

40 (4) A study of the feasibility of requiring an annual inspection for certain  
41 classifications of trucks;

42 (5) ~~An assessment of the procedures used for regulating the transportation of~~  
43 ~~hazardous materials in the State, including drivers' qualifications;~~

44 (5) An assessment of the procedures used for regulating the transportation of  
45 hazardous materials including drivers' qualifications, substance identification, and hazardous  
46 material abatement and containment;

47 (6) An examination of the relationship of the federal commercial zone

1 classification to enforcement of truck safety; and

2 (6) (7) An examination of the impact of interstate trucking on Maryland  
3 highway safety and of methods, such as cooperative interstate compacts, that may be  
4 employed to insure that highway safety is not jeopardized by trucks passing through the  
5 State; and be it further

6 RESOLVED, That staff for the task force be provided by the Governor's office; and  
7 be it further

8 RESOLVED, That copies of this Resolution be forwarded by the Department of  
9 Legislative Reference to the Honorable William K. Hellmann, Secretary of  
10 Transportation, P.O. Box 8755, Baltimore-Washington International Airport, Baltimore,  
11 Maryland 21240; Mr. Marshall Rickert, Motor Vehicle Administrator, 6601 Ritchie  
12 Highway, N.E., Glen Burnie, Maryland 21062; the Honorable Frank O. Heinz,  
13 Chairperson of the Public Service Commission, American Building, 231 E. Baltimore  
14 Street, Baltimore, Maryland 21202; the Superintendent of the Maryland State Police,  
15 Headquarters, Pikesville, Maryland 21208; Mr. Edward J. Muhl, Insurance  
16 Commissioner, State Insurance Division, 501 St. Paul Place, Baltimore, Maryland 21202;  
17 Mr. Vincent H. Howley, Executive Director, Maryland Automobile Insurance Fund,  
18 1750 Forest Drive, Annapolis, Maryland 21401; and the Honorable J. Hugh Nichols,  
19 Chairperson, Regional Planning Council, 2225 N. Charles Street, Baltimore, Maryland  
20 21218; and be it further

21 RESOLVED, That copies of this Resolution be forwarded by the Department of  
22 Legislative Reference to the Honorable William Donald Schaefer, Governor of  
23 Maryland; the Honorable Thomas V. Mike Miller, Jr., President of the Senate of  
24 Maryland; and the Honorable R. Clayton Mitchell, Jr., Speaker of the House of  
25 Delegates.

Approved:

\_\_\_\_\_  
Governor.

\_\_\_\_\_  
President of the Senate.

\_\_\_\_\_  
Speaker of the House of Delegates.

ATTACHMENT B

State of Maryland  
Membership on  
Governor's Task Force on Uniform Motor Carrier Procedures

CHAIRMAN

Richard H. Trainor, Secretary  
Maryland Department of Transportation  
P. O. Box 8755  
BWI Airport, Md. 21240-0755  
859-7397

MEMBERS

Maryland State Police

Capt. Richard Janney, Commander,  
Automotive Safety Enforcement  
Division  
Maryland State Police  
6601 Ritchie Highway  
Glen Burnie, Md. 21062  
768-1735

Capt. John Himmelmann, Commander,  
Truck Enforcement Division  
Maryland State Police  
7777 Washington Boulevard  
Jessup, Md. 20794  
799-8822

Public Service Commission

Claude M. Ligon, Commissioner  
Public Service Commission  
American Building  
231 E. Baltimore Street  
Baltimore, Md. 21202  
333-6094

Dept. of the Environment

Dr. Max Eisenberg, Asst. Sec. for  
Toxics, Environmental Science  
and Health  
Dept. of the Environment  
201 W. Preston Street  
Baltimore, Md. 21201  
225-5780

MEMBERS

Comptroller of the Treasury

Howard C. FitzGerald, Director  
Motor Vehicle Fuel Tax Division  
Comptroller of the Treasury  
P. O. Box 1751  
Treasury Building  
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Maryland Motor Truck Association

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Maryland Motor Truck Association  
Bowie Hall Trucking, Inc.  
P. O. Box 1470  
LaPlata, Md. 20646  
934-2788

Maryland Independent Truckers  
and Drivers Association

Rita Bontz, President  
Maryland Independent Truckers  
and Drivers Association  
1109 Plover Drive  
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242-0507

Maryland Bus Association

William L. Rohrbaugh, President  
Maryland Bus Association  
Rohrbaugh's Charter Service, Inc.  
3395 Main Street  
Manchester, Md. 21102  
1-239-8000

Revised: September 1987

ATTACHMENT C

### TRUCK SAFETY TASK FORCE

Richard H. Trainor, Chairman  
Secretary

Maryland Department of Transportation  
P. O. Box 8755

Baltimore-Washington International Airport, MD 21240-0755

#### MEMBERS

Senator Thomas Yeager  
Legislative District 13  
413 Main Street  
Laurel, MD 20707  
498-3400

American Joe Miedusiewski  
Delegate

Session address:

H100 State House  
Annapolis, MD 21401-1991  
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Interim address:

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276-8225

Marshall Rickert Administrator  
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Automotive Safety Enforcement  
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Teamsters Joint Council  
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United States Fidelity &  
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ATTACHMENT D

Maryland Motor Carriers Industry Advisory Committee

CHAIRMAN

J. Sean Callahan  
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151 Easton Boulevard  
Preston, Maryland 21655  
(800) 551-7737 or 1-673-7151

MEMBERS

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Revised: July 1987

ATTACHMENT E

## Truck Inspection Subcommittee

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Maryland Department of  
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P. O. Box 8755  
BWI Airport, MD 21240

Captain Richard Janney  
Automotive Safety Enforcement  
Division  
Maryland State Police  
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Dr. Max Eisenberg, Asst. Sec.  
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Bruce Diehl  
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Mr. Edward Gallagher IV  
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Mr. John G. Jameson, Jr.,  
President  
Maryland Motor Truck Assoc.  
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Mr. Claude M. Ligon,  
Commissioner  
Public Service Commission  
American Building  
231 E. Baltimore St.  
Baltimore, MD 21202

Mr. Richard Page  
Public Service Commission  
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231 E. Baltimore St.  
Baltimore, MD 21202

Dr. Harvey Clearwater  
Associate Professor  
Director, Safety Education  
Center  
University of Maryland  
PERH  
College Park, MD 20742

ATTACHMENT F

Extracts from

# Joint Legislative Report



Public  
Utilities  
Commission

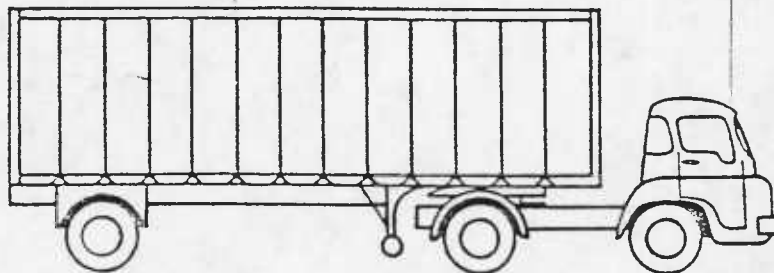
**AB  
2678  
REPORT  
ON  
TRUCK  
SAFETY**

California  
Highway  
Patrol



**Highway Patrol**

June 1987





## EXECUTIVE SUMMARY

AB 2678 is a bill requesting information on the safety of heavy trucks on California highways. It also requests information on the relationships of the Department of the California Highway Patrol, the Public Utilities Commission and other state agencies in fulfilling their respective roles. The bill contains seven main sections: b:(1) through b:(7). The CHP and CPUC have responded to five of these sections in full, and two in part in this report. A second report addressing the remaining questions will be submitted on September 30, 1987. The primary findings for each section are summarized below.

Section b:(1) Driver Error Consistently Causes About 94% of Truck-At-Fault Accidents. Accidents Caused by Brake Failure Or Other Mechanical Defect Are Declining. Between 1976 and 1986 the ratio of truck-at-fault accidents to miles traveled declined 33%, although the actual number of accidents increased during that period. Driver error causes about 94% of truck-at-fault accidents and mechanical defects cause about 4%. Brake related accidents are at their lowest level in eleven years, although California trucks now travel almost twice as many miles annually - an estimated 8 billion in 1986 compared to 4.3 billion in 1976. The CHP notes that increased inspection forces may have contributed to safer highway truck equipment.

Section b:(2) Identification of Unsafe Trucks and Truck Operators Is Under Study. The data currently collected by the CHP, CPUC, and other agencies does not distinguish highway accidents by class of truck. With data currently available it is not possible to assign the responsibility for unsafe trucks to large and small operators, or to California registered and out-of-state registered companies. Better data is available to determine how safely regulated and unregulated heavy trucks operate. All aspects of this question are still under study and will be addressed in a follow-up report on September 30, 1987. It has been demonstrated that trucks falling under the CPUC's jurisdiction account for about 20% of the total mileage traveled by heavy trucks on California's highways.

Section b:(3) The CHP and CPUC Exchange Information on All Levels.

A new Memorandum of Understanding between the CHP and the CPUC enables the agencies to exchange information on unsafe carriers and suspend their licenses. This enforcement power adds to coordinated activities at road inspections and the review of maintenance records. Information is also shared informally, and both agencies will draw information from MISTER, a new and more complete data bank for safety records installed at the CHP. MISTER may help both agencies and the Legislature target more effective inspection and licensing strategies in the future.

Section b:(4) CHP Vehicle Inspection and CPUC Licensing Are Complementary, and Both Aid Safety Compliance. CHP efforts and CPUC insurance requirements and suspension sanctions are part of a combined strategy of enforcement.

Section b:(5) The CPUC Is Increasing Enforcement Penalties For Rate and Other Violations. Effective in 1986 the Legislature approved higher and more extensive penalties for violations of CPUC regulations. Fines greater than \$10,000 may be the outcome in five pending rate cases, and staff is investigating two more rate cases where higher fines may be warranted. The Commission is also considering whether to suspend a carrier's authority for serious rate violations. This example would be a significant deterrent to potential law breakers. Two of the current rate investigations may result in penalty actions against irresponsible shippers. The relationship of this regulation of business operations and the safety of regulated carriers is addressed in other sections of this study.

Section b:(6) Extension of CPUC Jurisdiction Is Under Study.

The CPUC staff will compare regulated and unregulated carriers' safety records with the available data. The reliability and validity of available data sources is still under study. This comparison may then be used to assess the safety benefits of extended CPUC jurisdiction and will be addressed in a follow-up report on September 30, 1987.

Section b:(7) Enforcement At The Mexican Border Is Sufficient.

The CHP, CPUC, Department of Motor Vehicles, and Board of Equalization have consistently maintained coordinated enforcement at the California-Mexico border. The CPUC checks that carriers comply with the Interstate and Foreign Carrier Registration Act. The CHP checks vehicles including trucks for equipment, registration, and drivers licenses. All four agencies agree that current efforts are adequate. Consistently low traffic levels and violations indicate that expansion of these efforts is unnecessary.

TABLE 1.1

## CALIFORNIA TRUCK ACCIDENTS BY CATEGORY

## CALIFORNIA TRUCK-AT-FAULT ACCIDENT RATES

Year	Estimated Truck Mileage	Number of Truck-at- Fault Accidents	Number of Truck-at- Fault Fatal and Injury Accidents	Number of Truck- at-Fault Accidents Per 100 MTMT *	Number of Fatal and Injury Truck-at-Fault Accidents Per 100 MTMT
1976	4,336,748,920	15,838	3,849	365.2	88.75
1977	4,551,924,160	16,939	4,283	372.1	94.09
1978	5,336,037,405	18,162	4,739	340.3	88.81
1979	5,816,399,430	16,939	4,470	291.2	76.85
1980	5,770,883,000	13,326	3,570	230.9	62.24
1981	6,183,906,500	12,771	3,596	206.5	59.87
1982	6,168,062,000	12,149	3,320	196.3	53.77
1983	6,455,836,500	14,066	3,878	217.8	59.75
1984	7,233,558,000	16,781	4,627	231.9	63.97
1985	7,490,817,500	18,029	4,670	240.6	62.46
1986	7,968,308,000 <sup>1</sup>	19,443	5,013	244	62.91

\* MTMT = Million Truck Miles traveled

1 Preliminary

Source:

Mileage from State Board of Equalization

Accident Information from CHP

TABLE 1.2

## PERCENTAGE OF CALIFORNIA HIGHWAY TRUCK-AT-FAULT ACCIDENTS BY CAUSE

Year	Number of Truck-at-Fault Accidents	% by Driver Error PCF <sup>1</sup> (Estimated)	% by Mechanical Brake Defect PCF <sup>1</sup>	% by Mechanical Defect Other Than Brake PCF	% by Unknown PCF
1976	15,838	93.4	2.34	2.25	2.0
1977	16,939	93.1	2.49	2.40	2.0
1978	18,162	92.6	3.01	2.38	2.0
1979	16,939	92.6	2.96	2.44	2.0
1980	13,326	92.8	2.63	2.57	2.0
1981	12,771	92.6	2.68	2.72	2.0
1982	12,149	92.7	2.47	2.83	2.0
1983	14,066	93.3	2.14	2.56	2.0
1984	16,781	93.3	2.14	2.56	2.0
1985	18,029	93.8	1.95	2.25	2.0
1986	19,443	94.3	1.52	2.18	2.0

1 PCF = Primary Collision Factor

Source: CHP

TABLE 1.4

## CALIFORNIA ON-HIGHWAY TRUCK/TRAILER INSPECTIONS

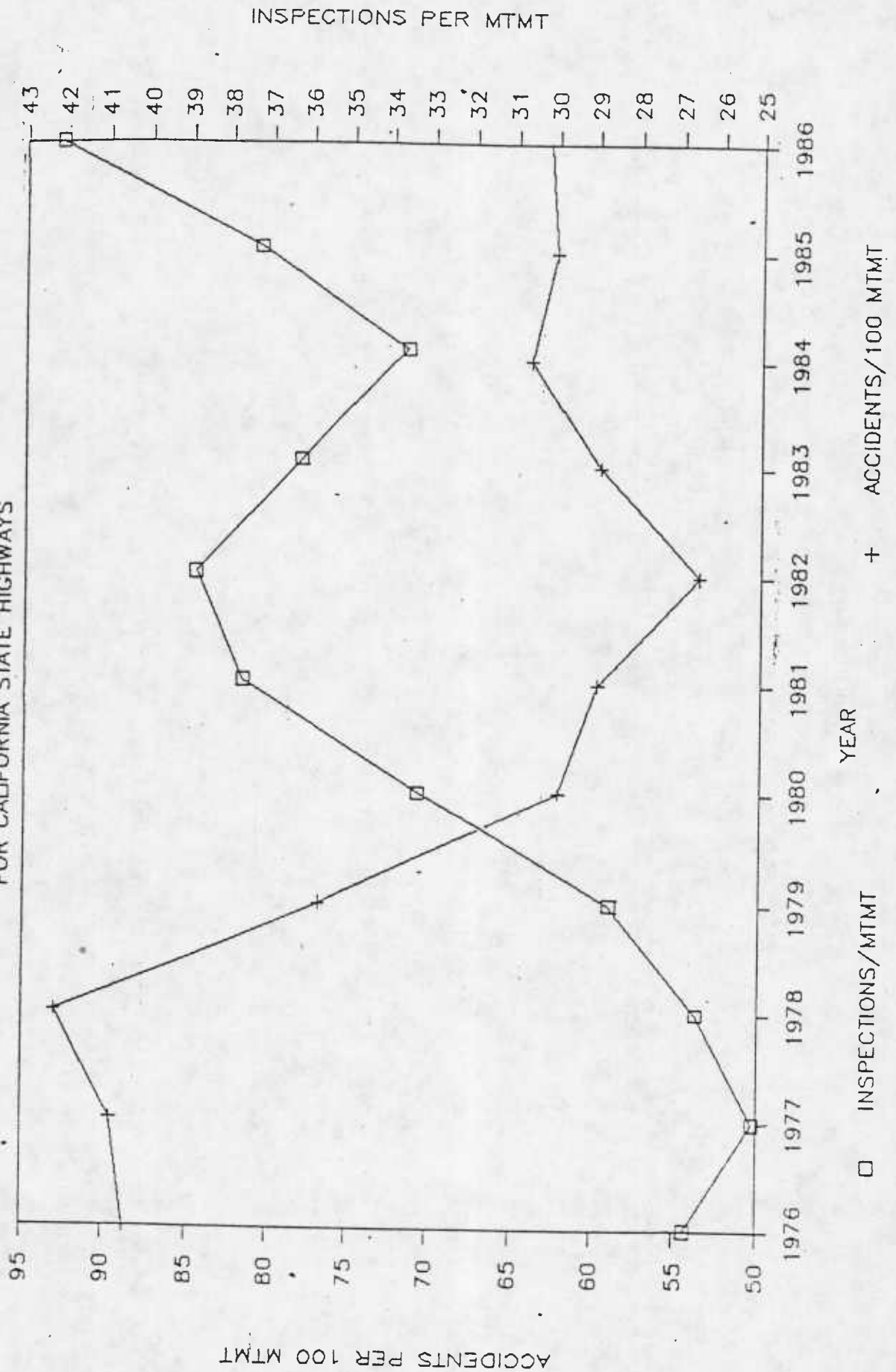
<u>Year</u>	<u>Trucks Inspected</u>	<u>Total Inspection Violations</u>	<u>Brake Violations</u>	<u>Average Number of Violations per Truck Inspected</u>	<u>Average Number of Brake Violations per Truck Inspected</u>	<u>% Placed Out of Service</u>	<u>% In Compliance**</u>
1979	166,702	335,973	185,734	2.0	1.11	*	*
1980	193,273	319,088	187,643	1.7	.97	*	*
1981	228,690	436,318	185,669	1.9	.81	20.0	25.3
1982	241,736	492,111	196,532	2.0	.81	19.2	23.0
1983	236,740	505,967	186,109	2.1	.78	20.0	21.1
1984	244,143	547,192	204,187	2.2	.83	22.2	20.8
1985	279,163	633,675	233,667	2.3	.83	23.8	20.1
1986	335,474	728,291	267,308	2.2	.79	22.4	21.3

\* Out of Service and In-Compliance data not available

\*\* This column reflects those trucks which were free of citations. There are also trucks at inspection stations which are cited, but are not taken out of service.

Source: CHP

Graph 1.3  
ACCIDENT RATE AND INSPECTION RATE  
FOR CALIFORNIA STATE HIGHWAYS

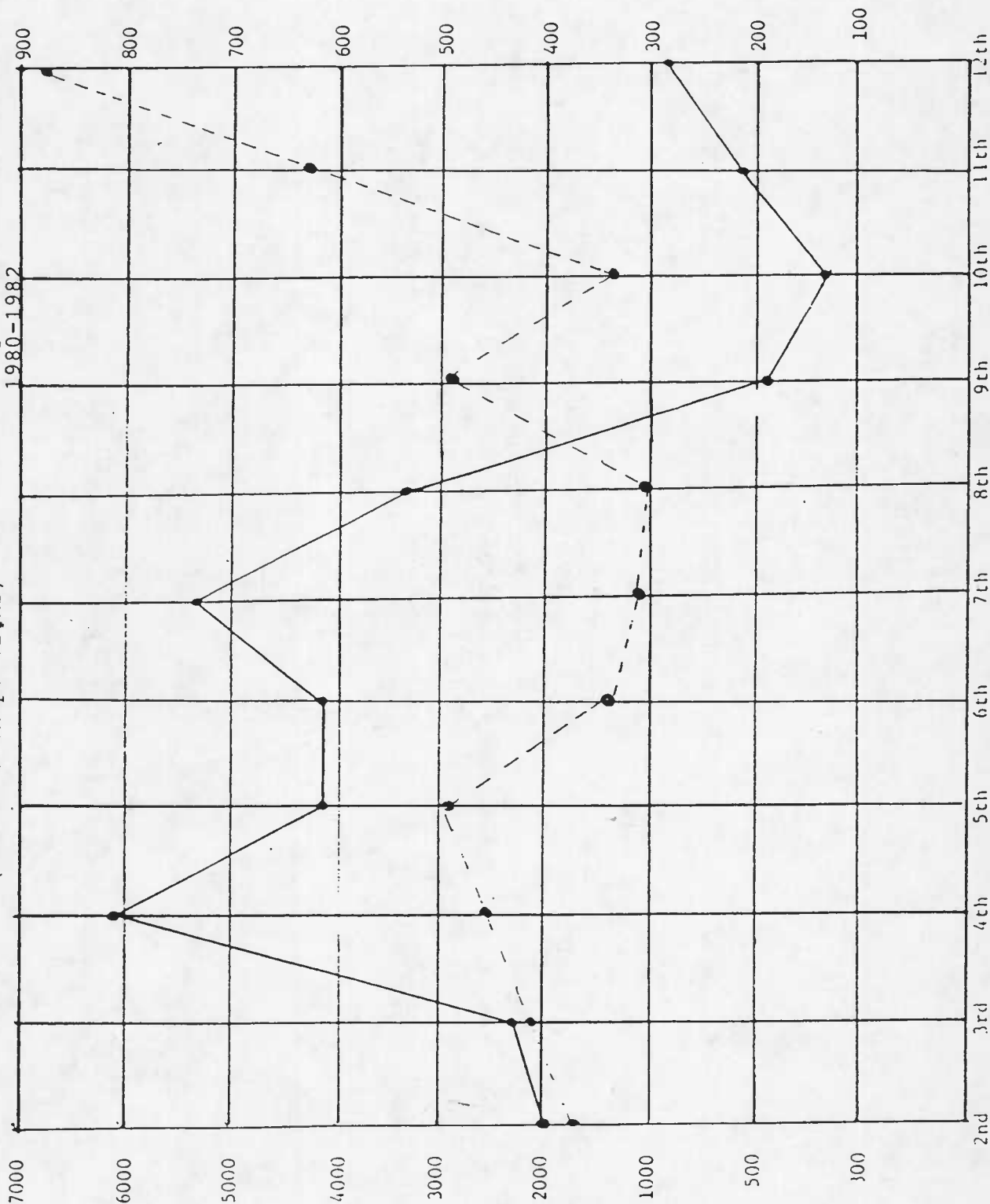




ATTACHMENT G

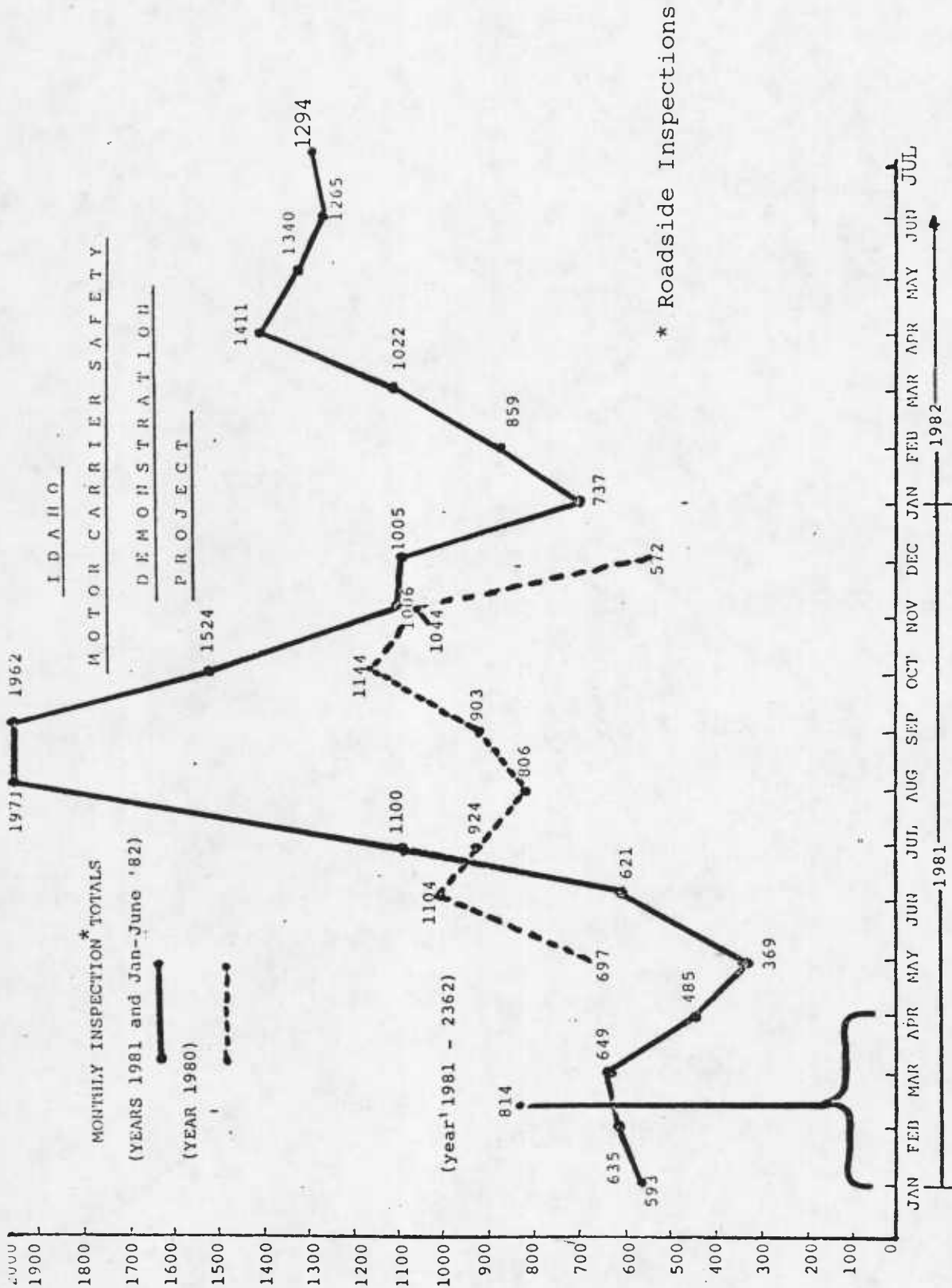
# Utah Motor Carrier Safety Inspection Demonstration Project 1980-1982

ACCIDENT/INSPECTION CORRELATION  
(Roadside Inspections)



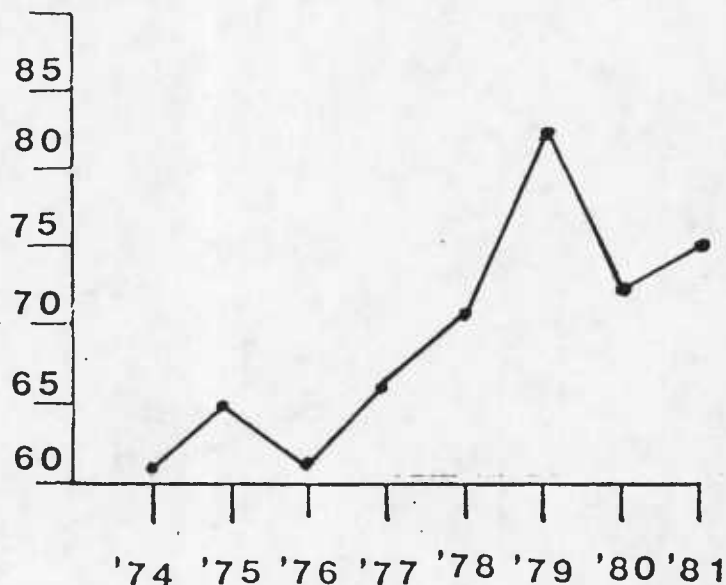
LEGEND: Solid line = Inspections  
Dashed line = Accidents

ATTACHMENT H

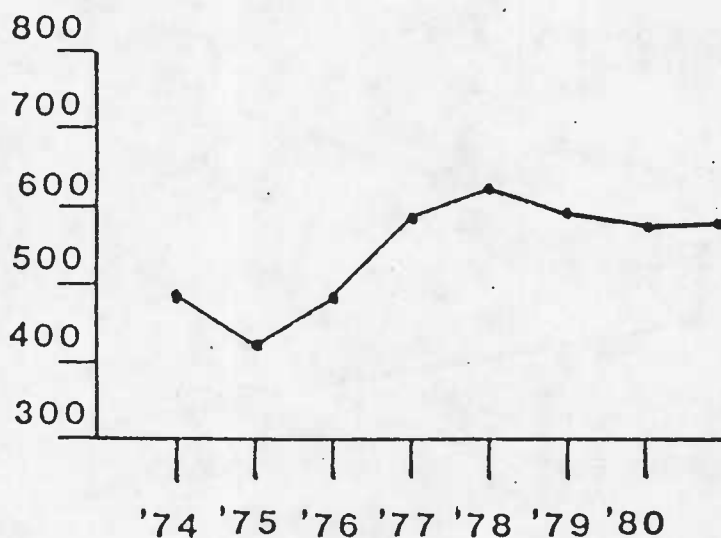


IDAHO DEMONSTRATION PROJECT

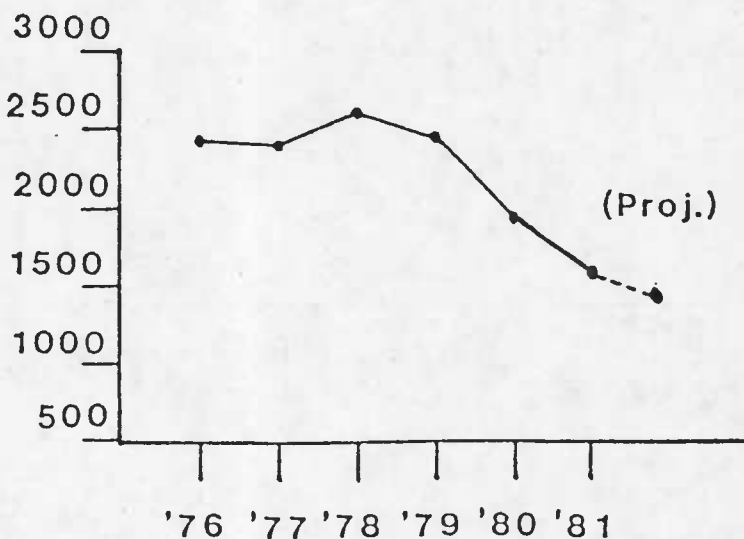
Yearly Diesel  
Fuel Consumption  
by Commercial Vehicles  
(millions of gallons)



Yearly Truck  
Miles Traveled  
(millions of miles)



Yearly Truck-Related  
Accidents



ATTACHMENT I



U.S. Department  
of Transportation  
National Highway  
Traffic Safety  
Administration

DOT HS 806 750  
FINAL REPORT

JANUARY 1985

COST-EFFECTIVENESS OF PERIODIC MOTOR VEHICLE  
INSPECTION (PMVI): A REVIEW OF THE LITERATURE

**RECEIVED**

JUN 28 1985

SECRETARY  
OF TRANSPORTATION

## EXECUTIVE SUMMARY

Compulsory motor vehicle inspection has been in effect in some American cities and states for more than 50 years, using either government inspection stations or government-licensed private garages. Yet, despite some favorable studies and the encouragement of the National Highway Traffic Safety Administration (NHTSA) via its state highway safety program standards, several states have refused to implement a periodic motor vehicle inspection (PMVI) program, and some states which did enact such a program later discontinued it.

Proponents of PMVI argue that some accidents are caused or aggravated by defective vehicle components and that it is important that all vehicles be inspected regularly and be required to meet certain minimum safety standards. On the other hand, critics of PMVI suggest that most owners try to maintain their vehicles in safe operating condition without the threat of mandatory inspections, and they question whether PMVI programs are actually cost-effective. They suggest that the benefits of PMVI in terms of safer vehicles and fewer accidents are not sufficient to outweigh the costs and nuisance of the inspection process.

Through the years a number of studies and reports have presented some data bearing on the benefits and/or costs of PMVI programs. Forty-one of these publications have been reviewed for this report. Unfortunately, not one of them was able to provide definitive evidence on the question of PMVI cost-effectiveness. However, many of them do provide some useful information bearing on this subject. Thus, this review uses them to try to assess the current state of knowledge concerning the benefits and costs of PMVI programs.

### Safe Vehicle Condition Studies

In regard to vehicle condition, a study sponsored by the Motor Vehicle Manufacturers Association (McCutcheon and Sherman 1968) and several studies sponsored by NHTSA (Fisher *et al.* 1971, 1973; Hatch *et al.* 1976; Innes and Eder 1977; Milne *et al.* 1978; Eder *et al.* 1978; Eder 1980) indicate that vehicle safety components tend to be in somewhat better condition on the average in PMVI jurisdictions than in non-PMVI jurisdictions. However, these findings were not consistent for all inspected components, nor even for overall outage rates. Also, none of these studies compared truly random samples of vehicles-in-use (they were mostly volunteers for a free inspection), so that leaves the results open to question. A re-analysis of Fisher's 1971 study indicated



that, while the between-state results were statistically significant, they were not large enough to have much practical effect on accident rates (Penn. Office of Budget 1981).

One observation study of random vehicles on the road found no significant differences in taillight outages between five PMVI and three non-PMVI jurisdictions (O'Day and Creswell 1968). In contrast, a random observation study in Massachusetts found headlamp outages increasing gradually from about 1% in the month after the fall inspection to about 2.5% six months after inspection (Bentley and Heldt 1977). Similarly, a random inspection of 20,000 vehicles in New Jersey found a 23% failure rate in the first month after the regular inspection rising to a 39% failure rate 12 months after the regular inspection, and a random/volunteer inspection in Missouri found the rejection rate rising from 40% to 47% for one month versus 12 months after the regular inspection (McMinn 1974; Bentley and Heldt 1977). Also Hatch *et al.* (1976) found a significant relationship between time since inspection in gross categories (six months, one year, etc.) and the outage rates for one of four brake components included in a regression analysis. Thus these studies do provide some credible evidence for the improvement of some vehicle safety components associated with mandatory inspections.

On the other side, there is also substantial evidence that PMVI programs are not completely reliable in detecting vehicle defects and in forcing them to be repaired. One indicator of this is the above-mentioned 23% failure rate for New Jersey vehicles and 40% rejection rate for Missouri vehicles in the first month after the state-operated inspection. In a Missouri survey of 58 licensed stations Bentley and Heldt (1977) reported an 87.3% compliance rate with state administrative guidelines for facilities, equipment, and record-keeping. In Virginia and New Hampshire Milne *et al.* (1978) found administrative compliance rates of 94.0% and 78.4% respectively. In covert observations of the procedures followed in 169 Missouri inspections, Bentley and Heldt (1977) found a 77.4% compliance rate with state inspection procedures. Similar covert observations in Virginia and New Hampshire showed 78.6% and 57.4% compliance rates respectively (Milne *et al.* 1978). In 31 New Hampshire inspections alignment was never checked, wheel bearings were only checked once, the two obviously defective tires were never failed, and the required wheel-pull to check brake condition was not carried out eight times. In Virginia six of 30 stations failed to carry out the required wheel-pull.

Two other studies also demonstrated poor reliability in PMVI programs. In an indepth study of vehicle defects in accidents in Indiana McDonald and Romberg (1977) judged that at least 22% of the discovered inspectable defects had already been present at the time the vehicle was inspected. In Pittsburgh the same vehicle with 13 inspectable

defects was inspected at 20 different private stations, and the number of defects found ranged from one to seven with an average of four (Carnegie-Mellon 1975). Perhaps even worse was that an average of 1.75 non-existent defects were found, and these had an average estimated repair cost of \$34.93. Of course this was a somewhat atypical situation in Pennsylvania, since only an inspection was purchased without repairs and thus the inspections may have been unusually cursory; but that certainly would not account for the incidence of non-existent defects found.

## **PMVI Effectiveness and Accident Studies**

A number of studies have attempted to evaluate PMVI effectiveness by looking at general accident rates in PMVI and non-PMVI states. Wort (1976) showed that prior to 1968 these overall comparisons favored the PMVI states, while from 1969 to 1973 they favored the non-PMVI states. The Pennsylvania Office of Budget and Administration (1981) found no significant differences in an analysis of 1971-1973 accident data. O'Day and Kaplan (1976) demonstrated the important interaction of population density and PMVI on state accident rates, but Tufte (1974) still found lower 1966-68 accident rates in PMVI states than in non-PMVI states when controlling on population density. Crain (1980) found no significant PMVI effect on 1965 and 1974 accident rates controlling on many factors in addition to population density, while Jackson, *et al.* (1982) did find a substantial PMVI effect on 1979 accident rates also utilizing many control factors.

Loeb and Gilad (1984) reported a time-series analysis of New Jersey accidents from 1929 to 1979 which found an average annual reduction of 304 fatalities associated with the introduction of PMVI in 1938. However, this study suffers from only having nine points in the base period, and the exceedingly large fatality reduction found suggests that not all important factors were taken into account in the model. The lack of a significant PMVI effect on injuries also tends to reduce the credibility of the fatalities results. Tufte (1974) warned against making the jump from statistical association to causal inference without also exercising common sense. While the New Jersey time-series analysis provides one piece of evidence in strong support of PMVI effectiveness, one would want to see these results replicated in a number of PMVI states by different researchers before concluding that PMVI is genuinely effective in reducing fatalities and accidents to the extent reported by Loeb and Gilad.

In support of a relationship between safer vehicles and lower accident rates, Wilson (1973) reported that 1970-1971 general accident rates were somewhat lower in parts of New Brunswick with lower rejection rates at the time of inspection. However, two studies

tried unsuccessfully to find a relationship between time since inspection and being in an accident (Garrett and Tharp 1969; Reinfurt and Symons 1974). The only study which looked at accident rates of inspected and uninspected vehicles in the same area (Huntsville, Ala.—Schroer and Peyton 1977) found lower accident rates in the inspected vehicles, but these were vehicles whose owners had volunteered them for a free diagnostic inspection, so the comparability of the two populations is open to question. However, they also reported that these vehicles had at least a 5.3% reduction in accident involvement in the period after the diagnostic inspection compared to the period before the inspection.

Given the rather small proportion of vehicle-related accidents found in accident investigations and the many known and unknown factors which affect a state's general accident rates, it may be unrealistic to attempt to evaluate PMVI effectiveness by looking at general accident rates. In the tri-level study of accident causation in Indiana, Treat and Stansifer (1977) found vehicle defects to be definitely causal in about one out of 19 accidents and definitely or probably causal or severity-increasing in about one out of eight accidents. Only one out of 41 accidents in this not-very-rigorous-PMVI state were definitely or probably caused solely by vehicle defects. Unfortunately, there have been no comparable accident investigation studies in non-PMVI jurisdictions, but what data are available suggest that these findings on vehicle defects in accidents are fairly typical for all states.

The few references to vehicle-defect accidents in the PMVI literature have had to make use of police-reported accident data. Because of the differences in accident reporting forms and procedures, these data are not likely to be comparable across state lines, even for the supposedly-comparable Fatal Accident Reporting System (O'Day *et al.* 1978). A NHTSA technical note (1975) reported dramatic reductions in police-reported vehicle-defect accidents in Texas (12% in 1951 to 4% in 1971) and Nebraska (6.1% in 1968 to 2.6% in 1972) in association with the introduction of PMVI, but one must be skeptical about such large changes being caused by PMVI. It seems likely that some changes in accident reporting procedures and practices accounted for at least part of these large reductions. More credible perhaps is the report (Eder *et al.* 1978) that in 1975 1.3% of the accidents in PMVI Cincinnati were attributed to vehicle defects compared to 1.8% in the rest of the state; but still one wonders about any possible differences in accident reporting practices which might relate to this difference.

A small study in Pennsylvania of 67 defect-related accidents found no relationship to the imputed length of time since inspection (Carnegie-Mellon 1975). Bentley and Cooper (1977) reported a larger study of 3000 defect-related accidents in New Jersey (out of

200,000) which similarly found no relationship to time since inspection. They suggested this procedure as potentially the most useful employment of police-reported accident data for evaluating PMVI, but no other studies of this sort were found.

## **Cost-Effectiveness Studies**

Given the uncertainties concerning the effectiveness of PMVI in reducing accidents, it is not surprising that all of the studies of PMVI cost-effectiveness have been quite speculative. Even with credible data on fatalities, injuries, and accidents avoided due to PMVI, it would be difficult to place a precise dollar value on these benefits because of the inherent difficulties of determining the economic value of the average fatal victim's life. It is somewhat easier to determine the costs of a PMVI program, at least the costs of the actual inspection procedures. How much to add as the vehicle owner's time and driving costs is more uncertain, and how much to include as the costs of forced repairs is even more uncertain. Among the ten reviewed studies which provided some cost estimates, only Thompson (1983) included an estimate for expedited repairs, and none included an estimate for unnecessary repairs forced by PMVI (a problem demonstrated by Schroer and Peters (1977) as well as by Carnegie-Mellon (1975)).

The only study which strongly supported the cost-effectiveness of PMVI was that of Loeb and Gilad (1984) in New Jersey, but their conclusion was based on their seemingly unrealistic finding that PMVI saved 304 lives and avoided 37,910 accidents annually in New Jersey. Thompson (1983), Abbene (1978), NHTSA (1975), and Carnegie-Mellon (1975) said that PMVI might be cost-effective, depending on which assumptions one regarded as reasonable regarding the effectiveness of PMVI in reducing accidents, regarding the dollar value of fatality and accident reductions, and regarding the costs of a PMVI program. California Highway Patrol (1974), NHTSA (1976), Wort (1976), and Tarrants and Voas (1981) were more pessimistic in their cost-effectiveness analyses. Based on this review of the research data presently available, it appears that PMVI programs could be considered cost-effective only if one accepted unrealistic assumptions about PMVI effectiveness in reducing accidents, or if one underestimated the full costs of a PMVI program including unnecessary repairs, or both.

## **Conclusions**

It is clear that there is a shortage of satisfactory research for determining the effectiveness of PMVI programs in reducing accidents. Under NHTSA contract, Bentley

and Cooper (1977) proposed a large-scale experimental program comparing accident rates for inspected and uninspected vehicles in the same geographic area. Probably their proposal is impractical and too expensive, but some less extensive and still useful research which could be carried out with existing accident data include:

- 1) Comparing vehicle-defect accident rates in PMVI and non-PMVI states using Fatal Accident Reporting System and National Accident Sampling System data sets.
- 2) Looking at vehicle-defect accidents in relation to time since inspection using accident files from PMVI jurisdictions.
- 3) Looking at before-after vehicle-defect accident rates in states which have introduced PMVI but have maintained the same accident reporting procedures, utilizing time-series regression techniques.
- 4) Replicating the Loeb-Gilad type of time-series analysis with general accident data in other PMVI states besides New Jersey.

While it is difficult to conclude that PMVI is cost-effective in a safety sense, many jurisdictions may still want to continue or initiate PMVI programs. Among the suggestions in the literature for improving PMVI reliability and cost-effectiveness, responsible PMVI officials should consider the following:

- 1) Concentrating on older more defect-prone vehicles.
- 2) Concentrating on safety critical components such as brakes, tires, and steering.
- 3) Perhaps eliminating semi-annual inspections in order to reduce costs.
- 4) Extensive monitoring and enforcement of inspection station compliance with administrative regulations and inspection procedures, including a well-publicized program of covert inspections or a system of random cost-free reinspections.

Alternatively, it may be that educational efforts coupled with a well-publicized police inspection program (perhaps concentrating on older vehicles or vehicles with easily observed defects such as light outages) could be more cost-effective than mandatory PMVI. In any event, as automobile manufacturers provide more durable vehicle components and more built-in indicators of component deterioration or failure (in order to simplify self-inspection and to encourage routine repair), there may be less need either for a PMVI program or for a police inspection program to force motorists to keep their vehicles in safe operating condition.

ATTACHMENT J

## Survey of Some PMVI States

September 17, 1987

State	Periodic Inspection				Roadside Inspection <sup>b</sup>				Inspections at Terminals		Safety Reviews/Audits		Comments	
	State Operated	Private Garage	Self <sup>a</sup> (min.)	# Veh. Inspected	# Veh. Inspected	% Out-of-Service		# Vehicles Inspected	% Failed	# MC's Subject to Review	# Reviewed /Audited			
						Vehicle	Driver							
DE	x		15	N/A	15	180	60	11	N/A	1,700	60	0	Semi-annual PMVI	
DC	x		x	7,500	30	—	—	—	—	—	—	—	Annual PMVI	
HI		x	50	23,158	—	3,586	20	3	23	0		1,750	Semi-annual PMVI	
IL		x	10	360,000	25	59,351	35	5	40				Semi-annual truck inspection	
ME		x		N/A	—				65-70			200	Annual PMVI	
MA		x		N/A	—	35,050	48	32	—	0			Annual PMVI	
NH		x		17,570	—	4,689	10	4	—	—		—	Semi-annual PMVI	
NJ	x		C	N/A		16,000	N/A	N/A	N/A	N/A		5,000	0	Annual PMVI
NY		x	25			8,620			66			3		Annual PMVI
NC	x	x	x	1,000,100		25,690	30	10	1			106		Annual PMVI
OK														PMVI for commercial vehicles not implemented
PA		x	15	157,000	N/A	18,658	46	8	51					Semi-annual PMVI
RI		x				1,619 <sup>d</sup>	90 <sup>d</sup>	11						Annual PMVI
SC			x			5,626	48	11	46	N/A	N/A	0		Annual PMVI <sup>e</sup>
VT		x	x			N/A	N/A	N/A	N/A					Annual PMVI; no roadside program
VA		x	20	151,212	40	3,587	—	—	43	—				Annual PMVI
WV		x	x	N/A		13,000	47	8	—			0		Annual PMVI

## Notes:

A. Minimum fleet size for self-inspection.

B. Some variations in method of counting vehicles out of service among states.

C. For NJ: fleets of 10 or more gasoline powered and all diesel units over 10,000 lbs. self-inspected.

D. Number of vehicles inspected in 3 months; combination vehicles counted as two vehicles when placed out of service.

E. ICC regulated carriers are exempt from annual inspection.

# Survey of Some Non-PMVI States

September 17, 1987

State	Roadside Inspection*				Inspections at Terminals		Safety Reviews		Comments
	# Veh. Inspected	% Out-of-Service		# Vehicles Inspected	% Failed	# MC's Subject to Review	# Reviewed		
		Vehicle	Driver						
CT	15,000	63	1	--	1,000	63	1,000	75	For five months
ID	9,019	36	8						
IN	13,329	42	7	N/A					
MD	4,940	54	2	4	2,774	8		1	
NE	630	61							
SD**									
WY	1,098	45							

\* Some variations in method of counting vehicles out of service among states.

\*\* PMVI law repealed in 1979; was done by private garages - some very strict, others lenient. Does not currently have a truck inspection program.



ATTACHMENT K

British Columbia  
Roadside and Terminal  
Inspection Data

COMPLETE INSPECTION FAILURE RATIO BY DATE ON 870902

<u>DATE</u>	FOR SEMI-ANNUAL PROGRAM			FOR PREVENTATIVE PROGRAM		
	<u>TOTAL PASSED</u>	<u>TOTAL FAILED</u>	<u>FAILURE RATIO (%)</u>	<u>TOTAL PASSED</u>	<u>TOTAL FAILED</u>	<u>FAILURE RATIO (%)</u>
SEP 1986	827	1099	57	2074	1320	39
OCT 1986	833	1139	58	2111	1345	39
NOV 1986	853	1114	57	2112	1328	39
DEC 1986	909	1130	55	2168	1324	38
JAN 1987	927	1104	55	2209	1245	36
FEB 1987	910	1068	54	2221	1208	35
MAR 1987	808	979	55	2043	1031	34
APR 1987	960	1032	52	2341	1117	32
MAY 1987	1036	1104	52	2455	1153	32
JUN 1987	1040	1077	51	2428	1113	31
JUL 1987	1093	1083	50	2495	1077	30
AUG 1987	1196	1139	49	2581	1085	30

ATTACHMENT L

RPP  
7/21/87

MARYLAND PUBLIC SERVICE COMMISSION  
IN-TERMINAL VEHICLE INSPECTION PROGRAM

Type of Carrier	# Of Carriers With PSC Authority	# Of Vehicles Operated	# Of Vehicles Inspected In In-Terminal Inspections 1986	Ratio Of Vehicles Inspected To # Of Vehicles Operated	# Of Vehicles Placed Out Of Service For Equipment Defects	Ratio Of Vehicles Placed Out Of Service To # Of Vehicles Inspected
1. Regular-Scheduled Passenger	79	5347*	1055	20%	76	7%
2. Charter Passenger	163	289	264	91%	38	14%
3. Limousine Services	47	89	21	24%	0	0%
4. Regular-Scheduled Freight	65	2117	782	37%	74	10%
5. Courier Freight	30	162	107	66%	6	6%
6. Flammable Freight	33	1251	545	44%	18	3%
TOTALS	417	9255	2774	Average = 30%	212	Average = 8%

\* A number of these vehicles are owned by Trailways and Greyhound operating companies and are filed with the Maryland P.S.C. in the event that they can come into Maryland. However, many never travel in Maryland.

ATTACHMENT M

9/9/87  
RPP

ANALYSIS OF MCSAP ROADSIDE INSPECTIONS - 1986  
(Maryland)

	<u>1/1-6/30/86</u>	<u>7/1-12/31/86</u>	<u>TOTAL</u>
I. (1) No. of PSC-Regulated Units Inspected	68	122	190
(2) No. of Defects Observed	330	360	690
(3) Average No. of Defects/Unit	4.9	3.0	3.6
(4) No. of Units Placed "Out of Service"	28	23	51
(5) % of Units Placed "Out of Service"	41%	19%	27%
II. (1) No. of State-Registered Units Insp.	475	546	1,021
(2) No. of Defects Observed	3,611	3,829	7,440
(3) Average No. of Defects/Unit	7.6	7.0	7.3
(4) No. of Units Placed "Out of Service"	283	326	609
(5) % of Units Placed "Out of Service"	60%	60%	60%
III. (1) Total No. of Units Inspected	2,111	2,829	4,940
(2) Total No. of Defects Observed	14,845	15,822	30,667
(3) Average No. of Defects/Unit	7.1	5.6	6.2
(4) Total No. of Units Placed "Out of Service"	1,273	1,397	2,670
(5) % of Units Placed "Out of Service"	60%	49%	54%

ATTACHMENT N

September 9, 1987

Summary of Certain Responses

to

OMCS Docket No. MC-113  
Motor Carrier Safety Regulations;  
Inspection, Repair, and Maintenance  
(Proposed Self-Inspection Program)

- o Michigan State Police
  - Annual inspection not effective for commercial high mileage vehicles.
  - Eliminate requirement for post-trip inspection.
  - Define pre-trip according to CVSA standards.
  - Provide for refusal to driver to drive on unsafe vehicle.
  - Require self-inspection every 10,000 miles.
  - Motor carrier responsible for repair.
  - No minimum fleet size.
- o Owner Operators Independent Drivers Association
  - Agree with annual self-inspection.
  - Oppose state operated annual inspection.
  - Oppose five vehicle requirement (one as in IRP).
  - Carry evidence of inspection in vehicle.
  - State programs should conform to federal.
  - Accept CVSA (roadside) in lieu of annual.
- o Commercial Vehicle Safety Alliance
  - No minimum fleet size.
  - Annual only.
  - Carry evidence of inspection with vehicle (inspection form or decal).
- o British Columbia
  - Current Provincial program.
    - \* Implemented 9/1/86.
    - \* Vehicles in excess of 17,300 kg (38,139 lbs.); also commercial trailers, buses, and taxis.
    - \* Semi-annual inspection by authorized inspector at authorized inspection facility.



- \* Inspector prohibited from approving vehicles he owns or leases or a vehicle owned or leased by his employer.
- \* Fleets of 5 or more vehicles may be exempted from semi-annual if they have an approved preventative maintenance (PM) program.
- \* Minimum established standards for self-inspection.
- \* PM's monitored by Provincial inspectors; if it does not meet established standards, exemption lifted and carrier must engage outside facility and inspectors to conduct inspections (therefore, financial incentive to comply).
- \* Program tied to vehicle registration renewal.
- \* Program effectiveness (average % out-of-service) according to 11-month results of roadside inspections:
  - Semi-annually inspected - 55%
  - PM program - 38%
- \* Trend for out of service at roadside inspections:
  - Semi-annually inspected - 5% reduction
  - PM program - 11% reduction

- Some comments

- \* Now feel minimum fleet size should be 15.
- \* Display expiration date (not issue date) on decal.
- \* Should not recognize roadside inspection as a substitute.

o Ryder

- Exemption from annual inspection if carrier maintains periodic inspection records and such records are available to government inspectors.

o Institute of International Container Lessors

- Request exclusion for chassis leasing industry; lessee should be responsible.

o National Liquefied Petroleum Gas Association

- Vehicle sticker; form not to be carried in vehicle.
- Uniform state plans.

- o Illinois Department of Transportation
  - If vehicle travels more than 20,000 miles per year, inspection based on mileage rather than annual.
- o National American Wholesale Grocers Association
  - Support at least annual; preferably another inspection six months after annual.
  - No inspector or facility certification.
  - Sticker on vehicle; form at office.
- o American Petroleum Institute
  - Support annual.
  - Support minimum five-vehicle fleet.
- o Insurance Institute for Highway Safety
  - Need greater government approval and oversight of self-inspection.
  - More rigorous standards.
  - Need more enforcement and penalties.
  - Carry inspection report in vehicle.
- o Puget Sound Freight and Truck Lines
  - Oppose annual since company has own preventive maintenance program and maintains records.
- o Chevron Oil Company
  - Annual inadequate.
  - Need quarterly.
  - Support minimum five-vehicle fleet.
  - Carry copy of inspection form in vehicle.
  - No sticker.
- o American Trucking Associations
  - Federal (federally mandated) annual inspection is a bad idea; could divert federal personnel away from more productive activities.
  - One inspection per year for commercial vehicle not adequate.

- Need to develop something that meets the spirit of the law (M.C. Safety Act of 1984) but does not have a negative effect on other promising safety efforts.
- Inspector qualifications should be based on requirements for FHWA inspector.
- Need to clarify who is responsible for qualifications of inspectors, if not carrier's employees.
- Not necessary to have special facility; current state and federal inspections done in terminal lots and along highways.
- Allow both sticker or form as evidence of inspection.
- Do not require disassembly (e.g., pulling of wheels and brake drums) of equipment; could do more harm than good.
- Need an adjudication procedure.
- Consider ATA's alternative inspection criteria based on Canadian standards.
- Consider reciprocity with Canada.

ATTACHMENT O

APPLICABLE ADVANTAGES FOR  
TRUCK INSPECTION OPTIONS FOR MARYLAND

9/10/87

OPTION

Advantage	1	2	3	4	5	6
	Current expansion of roadside inspections, safety reviews and in-depth accident investigations & wait for Federal rulemaking.	Established annual inspection program; continue roadside inspections, safety reviews and in-depth accident investigations.	Increase roadside inspections; in-depth investigations and safety reviews at current levels	Increase roadside inspections, safety reviews and in-depth investigations; add safety audits and vehicle inspections at terminals	Institute PM program certification and enforcement; eliminate current roadside inspections, safety reviews and in-depth investigations.	Increase roadside inspections, safety reviews, and in-depth investigations; add PM certification and enforcement, safety audits, and vehicle inspections at terminals
Inspect MD trucks	Some	All	More	More	All	All
Inspect Out-of-State trucks	Some	Some	More	More	None	More
Check MD and Out-of-State drivers licenses	Some	Some	More	More	None	More
Check drivers for hours of service	Some	Some	More	More	None	More
Inspect cargo	Some	Some	More	More	None	More
Check vehicle and fuel use tax registration	Some	Some	More	More	Some (A)	More
Conduct safety reviews at terminals	Some	Some	Some	More	Some	More
Conduct safety audits and vehicle inspections at terminals	Limited (B)	Limited (B)	Limited (B)	Some	Limited (B)	More
Enforce PM (C) regulations	No	No	No	No	Yes	Yes
Inspect before issuing MD title (D)	Yes	Yes	Yes	Yes	Yes	Yes
Conduct in-depth accident investigations	Some	Some	Some	More	None	More
Issue SERO's (E) for defective equipment	Some	Some (F)	Some	Some	Some (F)	Some

(A) In the course of general traffic law enforcement.

(B) Certain intra-state vehicles regulated by Maryland PSC.

(C) Preventive maintenance.

(D) Used vehicle for resale and used vehicles from other states to be based in Maryland.

(E) SERO - Safety Equipment Repair Order.

(F) Issued in the course of general traffic law enforcement.

ATTACHMENT P

September 24, 1987

**Some Definitions of Terms  
Used in Report**

**Roadside inspection**

- o Full - inspection of critical vehicle safety components visually for their functioning as well as measuring certain items such as brake pushrod travel; inspector needs to get under vehicle to do an inspection. Driver and cargo also checked.
- o Walk-around - inspection of functioning of critical vehicle safety components that can be checked without getting under the vehicle; includes inspection of driver and cargo.
- o Driver - check of license, medical certificate, driver logs, and prior day's vehicle inspection report checked in conjunction with full or walk-around vehicle inspection.

Safety review - a review of carrier's overall safety system and recommendations for improvements.

Safety audit  
(compliance review) - an audit of carrier's vehicle inspection and maintenance records, driver qualification and hours of service records.

Terminal inspection - an inspection of those vehicles ready for service conducted at motor carrier's terminal according to the same criteria as a full roadside inspection.

In-depth accident  
investigation - investigation of a vehicle accident to determine its principal causes and contributing factors; done as a supplement to routine police report at accident scene.

Preventive maintenance

(PM) program - a systematic inspection, repair, replacement and/or maintenance of vehicle components based on mileage and/or time.

PM program certification & enforcement (as proposed):

- . State promulgates regulations covering minimum criteria for PM program.
- . Every owner of a motor vehicle over 10,000 pounds GVW certifies that he has a PM program for his fleet meeting state's regulations.
- . PM program recertified by fleet owner annually.
- . Certification of fleet PM tied to vehicle registration; registration not renewed until PM program certified; warning letters sent to carrier.
- . PM program audited and quality control checked through roadside and terminal inspections of vehicles; copy of latest PM inspection form to be carried in vehicle.